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HIGH EFFICIENCY INDUCTION HEATING AND MELTING SYSTEMS**Abstract of the Disclosure**

10 An induction heating and melting system uses a crucible formed from a material that has a high electrical resistivity or high magnetic permeability, and one or more inductor coils formed from a wound cable consisting of multiple individually insulated copper conductors to form an induction furnace that, along with its associated power supply, provides a compact design. The system components are air-cooled; no water-cooling is required. The crucible may alternatively be
15 shaped as a tunnel or enclosed furnace.